



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,803	09/08/2000	Hajime Tabata	0505-0673P	2995

7590

06/25/2002

Birch Stewart Kolasch & Birch LLP  
P O Box 747  
Falls Church, VA 22040-0747

EXAMINER

RAY, LONNIE L

ART UNIT

PAPER NUMBER

2643

DATE MAILED: 06/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/321,663	05/28/1999	JOHN ARTHUR FEE	1018P	6865

7590 05/23/2002

KATTEN, MUCHIN, ZAVIS, ROSENMAN  
575 Madison Avenue  
New York, NY 10022-2585

EXAMINER

PHAN, HANH

ART UNIT	PAPER NUMBER
----------	--------------

2633

DATE MAILED: 05/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/657,803

Applicant(s)

TABATA ET AL.

Examiner

Lonnie L. Ray, Jr

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**Detail Action**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negative by the manner in which the invention was made.

2. Claims 1, 2, 4 & 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deopuria et al (U.S. 6,154,890) in view of Warnaka et al (U.S. 6,195,440).

Consider claims 1 & 5. Deopuria et al. teach a speaker system (fig 3, #60) for attachment to an inner surface of a helmet (fig 1, #10), said speaker system comprising a speaker (fig 1, #24) functioning as a main surface, oscillating in response to an input signal and having a peripheral edge thereof supported by a frame (fig 3, #40 & 52) having a center opening (center cup opening or the recess wall 52). Deopuria et al. fail to teach that the speaker (60) is a piezoelectric film and having a peripheral edge supported by a frame having a center opening. Warnaka et al teaches piezoelectric film having a peripheral edge (41, fig 4) supported by a frame (43) having a center opening used for a speaker. Since the speaker of Deopuria et al. is generally disclosed it would have been obvious to one that is skilled in the art at the time of the invention was made to utilize any suitable speakers, including the piezoelectric speaker as taught by Warnaka et al to implement the required speaker.

Consider claim 2. The combination of Deopuria et al. in view of Warnaka et al further teaches that the frame supports the piezoelectric film speaker in a curved state (col 2, lines 46 – 49 in Warnaka et al).

Consider claim 4. The combination of Deopuria et al in view of Warkana et al teaches the speaker system, fixedly attached on an inner surface of a shell of said helmet by the use of hook and loop fastening material (see fig 2b, #38 & 42 of Deopuria et al.).

3. Claims 1, 3, 6 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deuporia et al (6,154,890) in view of Tibbetts (U. S. 2,912,605).

Consider claim 1 & 3. Deopuria et al teaches the speaker system (60) in the inner liner of the helmet and the fixedly attached hook and loop fastening material ( fig 2b, 38 & 42). Deopuria et al fails to disclose the frame having a center opening and is constituted by a pair of joined frame pieces (4,4 ) and the piezoelectric film speaker (1) has peripheral edge held by the pair of frame pieces.

Tibbetts teaches the frame having a center opening and is constituted by a pair of joined frame pieces (fig 3 & 4, #4) and the piezoelectric film speaker (1) has peripheral edge held by the pair of frame pieces (fig 3 & 4). Since the speaker of Deopuria et al. is only generally disclosed, it would have been obvious to one that is skilled in the art at the time of the invention was made to utilize any suitable speakers, including the piezoelectric speaker as taught by Tibbetts for the speaker of Deopuria et al. to implement the required speaker.

Consider claims 6 & 11. Deopuria et al teaches a helmet having a speaker (60) attached to the inner surface by a fastener (fig 2A & 2B).

Deopuria et al fails to teach that the speaker is of a piezoelectric speaker having: (1) a frame having a opening therein, (2) a piezoelectric film located on one side of said frame and covering said opening; (3) a laminating film attached to said one side of said frame and covering said piezoelectric film.

Tibbetts teaches a piezoelectric transducer having a frame and having an opening therein (fig 5), a piezoelectric film (1) located on one side of said frame and covering said opening, a film attached to said one side of said frame and covering said piezoelectric film. Since the speaker of Deopuria et al. is only generally disclosed it would have been obvious to one that is skilled in the art at the time of the invention was made to utilize any suitable speakers, including the piezoelectric speaker as taught by Tibbetts implement the required speaker.

The combination of Deopuria et al in view of Tibbetts fails to teach that the covering film is a laminated film covering. However, it is well known in the art of piezoelectric speakers that a laminating film, or a layer casing, or a frame is provided to protect the piezoelectric film from damage. Therefore, it would have been obvious to one of ordinary skill in the art to use a laminated film covering as is well known in the art in place of the diaphragm film covering for the piezoelectric film of the combination as an alternate choice of protecting the piezoelectric film from damage.

Consider claim 7. The combination of Deopuria et al in view of Tibbetts does teach that the frame is substantially rectangular (fig 6 & 7 of Tibbetts).

Consider claim 8. The combination of Deopuria et al in view of Tibbetts does teach the piezoelectric speaker, wherein said frame having a length dimension and width dimension, said length dimension being larger than said width dimension, and wherein said frame is curved along said length dimension ( fig 6 & 7 of Tibbetts).

Consider claim 9. The combination of Deopuria et al in view of Tibbetts fails to teach that the frame has a radius of curvature in a range of 210mm to 360mm. However, it would have been obvious to one of ordinary skill in the art to provide any suitable radius of curvature for the frame which holds the piezoelectric film of the combination, including such curvature in the range of 210 – 360mm, since it is well known in the art that the flexing of a standard piezoelectric film is in the range of approximately 500mm.

Consider claim 10. The combination of Deopuria et al in view of Tibbetts teaches the fastener is a hook-and-loop fastener ( fig 2b, #38, 42 of Deopuria et al).

4. Claims 12 - 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deuporia et al (U.S. 6,154,890) in view of D'Avolio et al (U.S. 5,479,521)

Consider claims 12 & 16. Deuporia discloses a helmet (10); a speaker (60) attached to the inner surface of the helmet by a fastener (fig 2b, 38 & 42).

Deuporia et al fails to disclose the piezoelectric speaker as claimed.

D'Avolio et al teaches a piezoelectric speaker comprising a first frame member (fig 2, #4) having a plurality of claws (13); a plurality of recesses (8) and a piezoelectric film (3), as claimed. Since the speaker of Deopuria et al is only generally disclosed, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize any suitable speakers including the piezoelectric speaker as taught by D'Avolio et al to implement the required speaker

Consider claim 13. The combination of Deopuria et al in view of D'Avolio et al further teaches a hook-and-loop fastener ( see fig 2b, #38 and 42).

Consider claim 14. The combination of Deopuria et al in view of D'Avolio et al Further teaches that the first frame including a film – receiving recess (recess for receiving the film fig 1, #8) for receiving said piezoelectric film therein.

Consider claim15. The combination of Deopuria et al in view of D'Avolio et al teaches a round frame rather than a rectangular frame for housing piezoelectric film. The examiner takes the office notice that piezoelectric transducers having rectangular shapes and other shapes are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art modify the piezoelectric transducer of the cabinet to be rectangular or any other required shape, since the shape of the transducer will depend on the structure that the transducer is to be mounted.



**Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lonnie Ray, whose telephone number is (703) 305 – 3279).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Curtis Kuntz can be reach on (703) 305-4708.

**Any response to this action should be mail to:**

Commissioner of Patents and Trademarks

Washington, D. C. 20231

**or fax to:**

(703) 308 – 6306 or (703) 308 – 6296 (Group's Fax Numbers)

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Virginia, Sixth Floor (Receptionist).

May 13, 2002

  
**SINH TRAN**  
**PRIMARY EXAMINER**